9-2014

BIOM 428.01: General Parasitology Laboratory

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BIOM 428 General Parasitology Laboratory

Fall semester, 2014

Instructor: Dr. W.O. Granath,
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Lab: Tu, Th 9:10-11 AM, Room: HS 404

Textbook: L.S. Roberts and J. Janovy. 2013. Foundations of Parasitology, 9th edition (you will need to bring this to lab each week).

Lab Book: Will be distributed during lab period. (Also, a loose leaf notebook and drawing paper will be very useful).

Lab tests: Three lab practicals. Each will cover approximately one-third of the semester's topics. (See lab topics for subjects to be covered by each practical.)

Grading:

Lab tests=30% X 3 tests	= 90%
Participation	= 10%
	100%

ATTENTION:

All students must practice academic honesty. Academic misconduct is subject to an academic penalty by the course instructor and/or a disciplinary sanction by the University.

All students need to be familiar with the Student Conduct Code. The Code is available for review online at http://www.umt.edu/SA/VPSA/index.cfm/page/1321.

SYLLABUS (l.o. =learning outcome)

Date **Topic**

Aug **26, 28** No Labs

Sep **2** General information; check-in, use of microscopes; survey of parasites (powerpoint).
l.o. Goals, scope and expectations of class will be explained.

4 LAB 1 - Symbiosis: mutualism - termite flagellates, endocommensalism - *Opalina* in frogs, endoparasitism - *Tritrichomonas* in mice.
l.o.:Observe, diagram and describe the 3 types of symbiotic relationships and be able to give an example of each.

9 LAB 2 - Phylum Apicomplexa: gregarines, *Eimeria, Toxoplasma*
l.o.: Observe, diagram and be able to recognize the life cycle stages of insect gregarines, eimerian parasites and *Toxoplasma*, and be able to diagram their biology.

11 LAB 3 *and* 4 - Phylum Apicomplexa (continued): malaria.
l.o.:Observe, diagram and be able to recognize the life cycle stages of the 4 human-infecting species of *Plasmodium*, and be able to diagram their biology (continued into next lab).

16 LAB 3 *and* 4 - Phylum Apicomplexa (continued): malaria, *Babesia*.
l.o.: Continue with goals from previous lab and also observe, diagram and be able to recognize the life cycle stages of *Babesia*, and be able to diagram its biology.

18 LAB 5 - Phylum Zoomastigina, hemoflagellates: *Trypanosoma* including living insect stages, *Leishmania*.
l.o.: Observe, diagram and be able to recognize the life cycle stages of common *Trypanosoma* and leishmanial parasites including their living insect stages, and be able to diagram their biology.

23 LAB 6 - Phylum Zoomastigina, intestinal flagellates: *Giardia, Trichomonas, Chilomastix*.
l.o.: Observe, diagram and be able to recognize the life cycle stages of the common intestinal flagellates
of humans, and be able to diagram their biology.

. **25** LAB 7 - Phylum Sarcodina: *Entamoeba* and related genera; Phylum Ciliophora: *Balantidium*; Phylum Myxozoa: *Myxosoma*.
l.o.: Observe, diagram and be able to recognize the life cycle stages of the common intestinal amebic and ciliates parasites of humans, and be able to diagram their biology; be able to recognize a common myxozoan of fish.

30 Catch-up and review.

OCT **2** Laboratory exam I: Protozoa

7 LAB 8 - Phylum Platyhelminthes, trematodes: monogenetic trematodes and *Aspidogaster*, digenetic trematode larval stages - miracidia, sporocysts and rediae.
l.o.: Observe, diagram and be able to recognize the life cycle stages of common fish monogenes, molluscan aspidogasters and digenean larval stages (continued in next lab).

9 LAB 9 *and* 10 - Phylum Platyhelminthes, trematodes (continued): digenetic trematode larval stages - living cercariae, cercarial types, metacercariae; adult digenetic trematodes- *Schistosoma*.
l.o.:Continue learning digenean larval stages as well as the adult stages of 3 human-infecting schistosome species.

14 LAB 9 *and* 10 - Phylum Platyhelminthes, trematodes (continued): digenetic trematode larval stages - living cercariae, cercarial types, metacercariae; adult digenetic trematodes- *Schistosoma*.
l.o.: Continue with learning objectives of previous lab and be able to diagram the life cycles of the 3 human-infecting schistosome species.

16 LAB 11 - Phylum Platyhelminthes, trematodes (continued): adult digenetic trematodes (continued) - *Echinostoma, Fasciola, Opisthorchis, Heterophyes.*

l.o.: Observe and diagram the adult stages of common lung, liver and intestinal flukes, and be able to diagram their biology.

21 LAB 12, 13 *and* 14 - Phylum Platyhelminthes, cestodes: pseudophyllidean and cyclophyllidean tapeworms
l.o.: Observe, diagram and be able to recognize the life cycle stages of the broad fish tapeworm, a mosquitofish tapeworm, and representative cyclophyllideans (which will be continued in the next lab) and be able to diagram their biology.

23 LAB 13 *and* 14 (continue) - Phylum Platyhelminthes, cestodes (continued): cyclophyllidean tapeworms.
l.o.:Continue to observe, diagram and be able to recognize the life cycle stages of common cyclophyllidean tapeworms, and be able to diagram their biology.

28 Catch-up and review.

30 Laboratory exam II: Platyhelminthes.

NOV **4** 6 Election Day, no class.

6 LAB 15 *and* Lab 16 - Phylum Acanthocephala; Phylum Nematoda: rhabditid and strongylid nematodes.
l.o.: Observe, diagram and be able to recognize the life cycle stages of common acanthocephalans and strongylids, and be able to diagram their life cycles.

11 Veterans Day, No class.

13 LAB 17 - Phylum Nematoda (continued): trichostrongylid and ascarid nematodes.
l.o.: Observe, diagram and be able to recognize the life cycle stages of common trichostrongylids and be able to diagram their life cycles. By dissecting adult Ascaris, be able to identify the gross anatomical features.

18 LAB 18 - Phylum Nematoda (continued): ascarid nematodes (continued).
l.o.: Observe, diagram and be able to recognize the life cycle stages of common ascarid nematodes and be able to diagram their life cycles.

20 LAB 19 Phylum Nematoda (continued): spiurid and trichinellid nematodes.
l.o.: Observe, diagram and be able to recognize the life cycle stages of common spiurid and trichinellid nematodes, and be able to diagram their life cycles.

25 LAB 20 - Phylum Arthropoda: survey of medically important arthropods.
l.o.:Survey representative arthropods and be able to identify them by common name and be able to name a parasite or microbe (if any) that they can transmit.

27 Thanksgiving, no class.

DEC 2 Catch-up and review.

46 Laboratory exam III: Acanthocephala, Nematoda, Arthropoda.